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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,379	08/15/2001	Christian Kropf	H 3763 PCT/U	8884

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DANN DORFMAN HERRELL AND SKILLMAN
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1601 MARKET STREET
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PHILADELPHIA, PA 19103-2307

EXAMINER

GRAFFEO, MICHEL

ART UNIT	PAPER NUMBER
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1614

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,379

Applicant(s)

KROPF ET AL.

Examiner

Michel Graffeo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 8-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Status of Action

Claims 8-21 are pending and examined.

Applicant has amended claims 8-9, 11-14, added claims 15-21 and provided arguments for the patentability of claims 8-17 in the response filed 23 February 2006.

Applicant's arguments, see response, filed 23 February 2006, have been fully considered and are persuasive to the extent that the rejection of claims 8 and 11 under 35 USC §102, has been withdrawn. Any rejection not specifically stated in this Office Action has been withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 8-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over S. Zhang and K.E. Gonsalves, J.Mater.Sci.Mater, Med. 8 (1997) 25. in view of US Patent No. 5,741,773 to Zhang et al.

Regarding claim 8, Zhang *et al.* teach a solution (see Experimental procedures) comprising rod-like shaped hydroxyapatite particles having a length of 25 nm (see page 26 second col), wherein the hydroxyapatite crystallizes into hexagonal rhombic prisms (see Introduction) and polyacrylic acid (see page 25 Experimental Procedures section which recites "the starting precipitates without polyacrylic acid were prepared in a similar way" which teaches that the method described includes salt precipitates with polyacrylic acid. See also Figure 1, which is a micrograph of rod-like hydroxyapatite crystals with polyacrylic acid in the system) to which the calcium is bonded (see page 28). Regarding claim 11, Zhang *et al.* also teach and a method of making rod-like shaped hydroxyapatite particles comprising a 30ml solution in which 7.63g of calcium nitrite was dissolved and 2 g of polyacrylic acid (2g of polyacrylic acid is at least.01% of

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the solution and not greater than 10% absent evidence to the contrary) was added (see Experimental procedures) such that the precipitated hydroxyapatite products were de-agglomerated as shown in Figure 1.

Zhang *et al.* do not teach a solution in which the hydroxyapatite is present in an amount of from 1 to 40% or a toothpaste comprising same nor does Zhang *et al.* teach gelatin as a specific protective colloid. Nonetheless, Zhang *et al.* teach polyacrylic acid which according to the instant Specification on page 7 is an equivalent to gelatin as now claimed and absent evidence to the contrary or evidence that the gelatin was identified for particular reasons over other disclosed protective colloids, one of ordinary skill in the art would have appreciated the use of polyacrylic acid in light of the teachings in the instant Specification.

In addition to the teachings in Zhang *et al.* the '773 Zhang *et al.* reference teaches hydroxyapatite compositions which include gelatin as a stabilizer (in current claims 15-21; see col 7 lines 15 and 55-65 as well as col 1 lines 40-50).

One of ordinary skill in the art would have been motivated to combine the above references and as combined teach the claimed invention as claimed. One of ordinary skill in the art would have been motivated to combine Zhang *et al.* with Zhang *et al.* because both are directed to hydroxyapatite compositions for the use as a dentifrice. Moreover, the protective colloids used in each perform the same functions i.e. the polyacrylic acid was used to modify the surfaces and promote calcium carbonate crystal growth whereas the gelatin is used as a stabilizer as well (see col 7 lines 12-15) which are also taught to have antiplaque and anticaries performance (see col 1 lines 42-50).

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Thus, the combined references teach and make prima facie obvious how to use the claimed invention at the time that it was made.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 8-14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 21 of copending Application No. 10/297,842 in view of US Patent No. 5,741,773 to Zhang et al. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

Claim 21 of the '842 application claims an oral care composition comprising a nanoparticulate hydroxide, carbonate or phosphate compound and a surface modifying agent. A surface modifying agent can be for example an amino acid like polyaspartic acid or pectins or gelatin which are described in the instant specification on page 7 as protective colloids. Further it would be obvious to one skilled in the art to compose a toothpaste comprising the above ingredients as described in Zhang et al.

Response to Arguments - 35 USC § 102

Applicant's arguments, see remarks, filed 24 February 206, with respect to 35 USC § 102 have been fully considered and are persuasive for the reasons indicated in the remarks.

Response to Arguments - 35 USC § 103

Applicant's arguments, see remarks, filed 24 February 206, with respect to 35 USC § 103 have been fully considered but are not persuasive. Although, Zhang et al. teach polyacrylic acid, according to the instant Specification on page 7 polyacrylic acid is an equivalent to gelatin (now claimed) and absent evidence to the contrary or evidence that the gelatin was identified for particular reasons over other disclosed protective colloids, one of ordinary skill in the art would have appreciated the use of polyacrylic acid in light of the teachings in the instant Specification. In addition to the teachings in Zhang et al. the '773 Zhang et al. reference teaches hydroxyapatite compositions which include gelatin as a stabilizer (see col 7 lines 15 and 55-65 as well

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as col 1 lines 40-50). Thus, a suspension comprising nanoparticulate hydroxyapatite and gelatin is not unobvious over the prior art.

Response to Arguments – Double Patenting

Applicant's arguments, see remarks, filed 24 February 2006, with respect to the Double Patenting rejection have been fully considered but are not persuasive for the same reasons as shown above regarding the rejection under 35 USC § 103.

Conclusion

No claim is allowed.

Applicant's amendment, specifically the newly added claims 15-21 and the addition of specific protective colloids, necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michel Graffeo whose telephone number is 571-272-8505. The examiner can normally be reached on 9am to 5:30pm Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on 571-272-0951. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

28 April 2006

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